

CLAIMS

Sub a1 } 1/ A method of setting up two-way optical communication between a central unit and a remote unit suitable for operating in a given communication mode selected from a plurality of communication modes, comprising:

5 · defining a plurality of frame patterns in the central unit with each frame pattern being appropriate to one of said communication modes; and

10 · sending said plurality of frame patterns sequentially until a coherent response is obtained from said remote unit, the communication mode of the remote unit being the mode which corresponds to the frame pattern which gave rise to said coherent response.

2/ A method according to claim 1, wherein the plurality of communication modes comprises simultaneous communication modes and alternating communication modes.

3/ A method according to claim 2, wherein the simultaneous communication modes comprise simplex, full duplex, and duplex modes.

4/ A method according to claim 2, wherein the alternating communication modes comprise half-duplex and part-duplex modes.

5/ A method according to claim 2, wherein the frame pattern appropriate to simultaneous communication modes is constituted by a complete frame, without any interruption of transmission.

6/ A method according to claim 2, wherein the frame pattern appropriate to alternating communication modes is constituted by a frame including an interruption in transmission in order to enable the remote unit to send
5 between the interruption of transmission from the central unit and the end of the frame.

7/ A method according to claim 6, wherein the remote unit is a reflection modulator and the frame consists, after transmission has been interrupted, in sending a constant level to be modulated and reflected by said remote unit.

8/ A method according to claim 6, wherein the interruption in transmission is defined by an end-of-frame cell for the down-frame.

9/ A method according to claim 8, wherein the position of the end cell of the down-frame is given by a frame header cell.

10/ A method according to claim 8, wherein the end cell of the down-frame is recognized by the remote unit.

11/ A method according to claim 5, wherein a frame header cell includes a special field specifying the frame pattern used.

12/ A method according to claim 1, wherein the remote units are distinguished by wavelength, and the step of sending the plurality of frame patterns sequentially is performed in succession at each remote unit wavelength until a coherent response is obtained.

13/ A method according to claim 1, wherein the remote units are distinguished by wavelength, and the step of sending the plurality of frame patterns sequentially is performed in succession at each remote unit wavelength for each frame pattern until said coherent response is obtained.